

WHAT IS CLAIMED IS:

1. An electrophotographic developer formed of a toner and a carrier,  
the developer comprising:

5           the toner having a shape factor of 140 or less and a volume  
average particle size distribution GSDv of 1.3 or less; and

          the electrophotographic carrier having a coat resin layer on  
a core material, the coat resin layer containing a conductive powder,  
the core material having a dynamic electric resistivity of  $1 \Omega \cdot \text{cm}$   
10 or less under an electric field of  $10^4 \text{ V/cm}$  in a form of a magnetic  
brush, the conductive powder having an electric resistivity of  $10^1$   
 $\Omega \cdot \text{cm}$  or greater and  $10^6 \Omega \cdot \text{cm}$  or less, and the carrier having an electric  
resistivity in a range between 10 and  $1 \times 10^8 \Omega \cdot \text{cm}$ , wherein

          the shape factor is defined by an equation,

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$$\text{Shape Factor} = (\text{ML}^2/\text{A}) \times (\pi/4) \times 100$$

wherein ML represents the absolute maximum length of the toner and  
A represents the projected area of the toner, and

20           the volume average particle size distribution GSDv is defined  
by an equation,

$$\text{GSDv} = (\text{D84}/\text{D16})^{1/2}$$

25           wherein volume D16 represents a particle size where an accumulated  
volume in an accumulation distribution from smaller size reaches  
16% and volume D84 represents a particle size where the accumulated  
volume in the accumulation distribution reaches 84%.

2. An electrophotographic developer according to Claim 1, wherein  
the thickness of the coat resin layer of the carrier is 0.3  
µm to 5 µm.
- 5 3. An electrophotographic developer according to Claim 1, wherein  
the conductive powder is contained in an amount of 3 volume%  
to 45 volume% with respect to the coat resin layer.
4. An electrophotographic developer according to Claim 1, wherein  
10 the toner is produced through an emulsion polymerization  
aggregation method.
5. A method for forming an image, comprising:  
a latent image processing stage for forming an electrostatic  
15 latent image on an electrostatic latent image holding member;  
a developing stage for developing the electrostatic latent  
image using a developer;  
a transfer stage for transferring a toner image formed through  
the development onto a transfer material; and  
20 a fixation stage for fixing the toner image on the transfer  
material, wherein  
the developer is an electrophotographic developer according  
to Claim 1.
- 25 6. A method for forming an image according to Claim 5, wherein  
in the latent image processing stage, an electrostatic latent  
image is formed on the electrostatic latent image holding member  
using a laser beam with a dot-concentrated type screen.

7. A method for forming an image according to Claim 5, wherein  
in the latent image processing stage, when an exposing means  
applies an image exposure process corresponding to an image signal  
to form an electrostatic latent image, the image signal to be output  
5 to the exposing means is processed so that the output image signal  
is produced by comparing the input image signal and a threshold  
value matrix to which threshold values are stored in advance for  
determining whether or not each pixel within a screen cell comprising  
a plurality of pixels in a dot-concentrated type screen is to be  
10 recorded, and wherein

the threshold value matrix is a threshold value matrix in which,  
when a non-linear region is present in a part of the image  
signal-output density characteristic, linearity is improved by  
inserting, between threshold values of the non-linear region in  
15 the image signal-output density characteristic where the slope is  
large, non-recording isolated pixels which are a pixel before and  
a pixel after in the main scan direction of the target pixel to  
be switched on, the non-recoding isolated pixels being switched  
off.

20 8. A method for forming an image according to Claim 5, wherein  
in the developing stage for developing the electrostatic latent  
image using a developer, the distance between the electrostatic  
latent image holding member and a developer holding member holding  
25 the developer is 350  $\mu\text{m}$  or less.

9. A method for forming an image according to Claim 5, wherein  
the peripheral speed of the electrostatic latent image holding  
member is 200 mm/sec. or greater.

10. A method for forming an image according to Claim 9, wherein  
the peripheral speed of the electrostatic latent image holding  
member is 300 mm/sec. or greater.

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11. An image forming apparatus comprising:

latent image processing means for forming an electrostatic  
latent image on an electrostatic latent image holding member;

developing means for developing the electrostatic latent image  
10 using a developer;

transfer means for transferring a toner image formed by  
development onto a transfer material; and

fixation means for fixing the toner image on the transfer  
material, wherein

15 the developer is an electrophotographic developer according  
to Claim 1.

12. An image forming apparatus according to Claim 11, wherein

the latent image processing means forms an electrostatic latent  
20 image on the electrostatic latent image holding member using a laser  
beam and with a dot-concentrated type screen.

13. An image forming apparatus according to Claim 11, wherein

in the developing means for developing the electrostatic latent  
25 image using a developer, the distance between an electrostatic latent  
image holding member carrier and the developer carrier holding the  
developer is 350  $\mu\text{m}$  or less.

14. An image forming apparatus according to Claim 11, wherein

the peripheral speed of the electrostatic latent image holding member carrier is 200 mm/sec. or greater.

15. An image forming apparatus according to Claim 14, wherein  
5 the peripheral speed of the electrostatic latent image holding member is 300 mm/sec. or greater.

16. An image forming apparatus according to Claim 11, wherein  
the latent image processing means processes, when exposing  
10 means applies an image exposure process corresponding to an image signal to form an electrostatic latent image, the image signal to be output to the exposing means so that the output image signal is produced by comparing the input image signal and a threshold value matrix to which threshold values are stored in advance for  
15 determining whether or not each pixel within a screen cell comprising a plurality of pixels in a dot-concentrated type screen is to be recorded, and wherein

the threshold value matrix is a threshold value matrix in which,  
when a non-linear region is present in a part of the image  
20 signal-output density characteristic, linearity is improved by inserting, between threshold values of the non-linear region in the image signal-output density characteristic where the slope is large, non-recording isolated pixels which are a pixel before and a pixel after in the main scan direction of the target pixel to  
25 be switched on, the non-recoding isolated pixels being switched off.